

CREST Status Report - April 20, 1999

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Activity: Consolidated Reporting of EarthquakeS and Tsunamis (CREST)

1) PTWC integration: We successfully completed the installation of the CREST communications and computing system at the Pacific Tsunami Warning Center (PTWC) in March, 1999. The installation consists of communication links, computers, digitizers, Ethernets, and software. The objective is to reliably supply critical data from regional seismic networks in North America into the PTWC processing systems. The objective is being met through the upgrade and installation of modern seismic equipment at the regional seismic networks and installation of uniform software at the seismic and warning centers. Broad band sensor installation is ongoing (see item 2 below).

The PTWC system is currently digitizing their own seismic data and tide gauges. The Core Tsunami Machine (CTS) is importing waveforms from HVO via the Internet, dedicated phone lines, and the above A/D machine. It presents the data to the PTWC internal system. Transmission of data from CREST, USNSN, and IDA stations are waiting on specification from PTWC.

2) HVO integration: We successfully completed the installation of the CREST communications and computing system at the Hawaii Volcano Observatory (HVO) in March, 1999. The installation consists of communication links, computers, digitizers, Ethernets, and software. HVO is now a fully functional CREST site and is now exporting continuous seismic data to PTWC.

3) Field equipment:, Installations of seismic instrumentation are proceeding as follows:

AEIC: 3 sites are installed. A borehole installation at the fourth site is in progress. Equipment is on order for remaining sites.

ATWC: Installation of 2 sites were delayed due to late delivery of dataloggers and difficulties in resolution of software interface to CTS systems.

NCSN: Installation of 2 sites were delayed due to late delivery of software for datalogger interface to CTS systems. Access is now difficult due to snow. Sites to be installed in June.

HVO: Equipment and software were delivered March, 1999. Installation for 2 sites planned for this summer.

PNSN: Phone line has been installed at one site and should be operational soon. Second site requires telephone company to bring new data line to site, and no delivery date has been given yet.

UO: Installation of sites planned for summer, 1999.

UCB: Quanterra datalogger still not delivered for jointly operated site. Anticipated installation date is this summer.

4) Communications: We installed dedicated 128 Kbit full-duplex telephone lines at HVO and PTWC. These lines constitute a private Internet by exploiting the abilities of routers to makes the entire CREST network appear like a TCP/IP subnet, much as one would find inside a building. The following linkages are operational and represent the final CREST configuration:

Link	Internet Link	Private Link	Trig. Data	Cont. Data	Hypocenters
USNSN1 ATWC		56K	X		
NCSN ATWC		56K		X	X
IDA1,2 ATWC	X	56K		X	
PNSN ATWC		56K		X	X
PGC3 ATWC	X			X	
AEIC ATWC		56K		X	
ATWC1 AEIC		56K		X	
ATWC AVO	X			X	
USNSN PTWC	X	128K		X	
PTWC HVO	X	128K4		X	
PTWC ATWC	X	56/128K		X	

- 1 Waveforms transmitted in compressed format
- 2 Data sent via Internet to USNSN, dedicated line to ATWC.
- 3 PGC is not connected to dedicated line, but software is operational
- 4 Link not functional at HVO end at this time. Anticipated completion 6/99.

5) Algorithms: Datalogger-to-CTS modules were completed for Quanterra and Reftek units. Software modules to interface the Earthworm to PTWC software were completed. Most of essential software has been completed. Remaining tasks, described below, provide derived seismological information to assist TWC's.

6) Future Tasks, exclusive of instrumentation installation

- Install a CTS system at University of Oregon.
- Install redundant CTS computers and routers at all sites.
- Integrate moment tensor computation into software. Software contract has been awarded to Doug Dreger at UCB.
- Integrate ML magnitude computation into software.
- Integrate shake-map parameter export into software.